

## EAST Search History

## EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	20	(62/618-620 or 62/628 or 62/630 or 62/631 or 62/635 or 62/640 or 62/644 or 62/656 or 62/657).cls. and @pd >= "20111013"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/22 16:07
S1	1	"10595528"	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/13 16:16
S2	50	"20010052241".pn. "20020166336".pn. "20030060644".pn. "20030221447".pn. "20040025535".pn. "20040148964".pn. "20040250569".pn. "20040261452".pn. "20050204774".pn. "20060150672".pn. "20060218968".pn. "20060260355".pn. "20070240450".pn. "20080202162".pn. "20080271480".pn. "20090173103".pn. "4374657".pn. "4418214".pn. "4519825".pn. "4589896".pn. "4617038".pn. "4832718".pn. "4883515".pn. "4885063".pn. "5019143".pn. "5220097".pn. "5321952".pn. "5325672".pn. "5406802".pn. "5678424".pn. "5685170".pn. "5771712".pn. "5799507".pn. "5884504".pn. "6244070".pn. "6308532".pn. "6395913".pn. "6453698".pn. "6500970".pn. "6596882".pn. "6658893".pn. "6662589".pn. "6837070".pn. "7051553".pn. "7069744".pn. "7073350".pn. "7159417".pn. "7191617".pn. "7219513".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/13 16:18

		"7257966". pn.				
S4	145	(john and mak) in.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/13 16:21
S6	14	"5771712". pn. "6363744". pn. "2771149". pn. "6112549". pn. "3793157". pn. "4854955". pn. "6453698". pn. "5953935". pn. "2603310". pn. "3421610". pn. "4102659". pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/13 16:35
S7	10	S6 and (control or controller or computer)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/13 17:31
S8	781	absorber and "distillation column" and ("control unit" or controller or control)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/14 09:10
S9	249	S8 and ((ratio with ("feed gas vapor" or "feed gas liquid")) or "column overhead" or demethaniz \$ or deethaniz\$ or "overhead temperature" or (bottom adj product))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/14 09:13
S10	245	62/628.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/14 15:48
S12	67	S10 and ratio	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/14 15:57
S15	719	fluor.as.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/07/14 16:36
S16	123	62/657.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/15 13:59
S17	333	62/630.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/16 10:57
S18	211	62/635.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/16 10:59
S19	1	"6116050". pn.	USPAT	OR	OFF	2010/07/16 12:47
S20	1	"6401486". pn.	USPAT	OR	OFF	2010/07/16 12:47
S21	72	two adj reflux	USPAT	OR	OFF	2010/07/16 14:53
S23	202	reflux adj overhead	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/16 17:24
S24	202	S23 and (reflux or two or stream or separate or diverge)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/16 17:25

S25	1	"5771712".pn.	USPAT	OR	OFF	2010/07/19 11:30
S26	1	"6662589".pn.	USPAT	OR	OFF	2010/07/19 13:37
S27	2	"11132795"	US-PGPUB	OR	OFF	2010/07/19 13:40
S28	1	"11491329"	US-PGPUB	OR	OFF	2010/07/19 13:49
S29	165	demethanizer adj deethanizer	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/20 08:51
S31	4	(operate or function) with (demethanizer adj deethanizer)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/20 09:05
S32	190	62/656.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/20 10:20
S33	67	S32 and (ratio or percent)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/20 10:21
S34	21	S32 and ((adjust or change or vary or varies) adj (ratio or percent or flow))	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/20 10:24
S35	6	S32 and "flow ratio"	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/20 10:32
S39	49	"stripping gas" adj (distillation or column or overhead)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/20 13:50
S40	445	"stripping gas" adj5 (distillation or column or overhead)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/20 14:11
S41	108	62/618.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/20 15:24
S42	230	62/619.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/20 15:48
S43	230	62/619.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/21 08:52
S44	156	62/640.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/21 09:09
S45	77	62/644.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/21 09:40
S46	55	"stripping gas vapor"	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/21 10:54
S47	5	"stripping gas vapor" with (absorber or demethanizer or deethanizer or column)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/21 10:57

S49	2	"62"/\$ ccls. and (ethane adj5 (reabsorption or "re-absorption"))	US-PGPUB; USPAT; USOCR	OR	OFF	2010/11/19 10:54
S50	2	(ethane adj5 (reabsorption or "re-absorption"))	US-PGPUB; USPAT; USOCR	OR	OFF	2010/11/19 11:17
S51	123	62/657.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/11/19 11:23
S52	337	62/630.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/11/19 11:23
S53	211	62/635.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/11/19 11:23
S54	109	62/618.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/11/19 11:23
S55	233	62/619.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/11/19 11:23
S56	233	62/619.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/11/19 11:23
S57	160	62/640.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/11/19 11:23
S58	79	62/644.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/11/19 11:23
S59	1181	(S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/11/19 11:23
S60	6	("3074245"   "4352685"   "5289688"   "5617741"). PN. OR ("6116051"). URFN.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/11/19 13:25
S61	721	(62/618-620).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/05/25 10:22
S62	601	(62/630,631,635).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/05/25 10:23
S63	257	(john and mak).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/05/25 10:25
S64	1	(10/469456).APP.	USPAT; USOCR	OR	OFF	2011/05/25 11:06

S65	8	("3421984"   "4509967"   "4657571"   "5220797"   "5685170"   "6368385"). PN. OR ("7051553"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/05/25 11:10
S66	50	((("20020004534") or ("20040025535") or ("20040148964") or ("20040250569") or ("20040261452") or ("20050204774") or ("20060000234") or ("20070240450") or ("20080202162") or ("20080271480") or ("20090087368") or ("20090173103") or ("20090270651") or ("20090282864") or ("20100287982") or ("20100287985") or ("3607734") or ("4045191") or ("4141695") or ("4158556") or ("4205962") or ("4212726") or ("4318723") or ("4382366") or ("4383842") or ("4402795") or ("4411677") or ("4445917") or ("4462814") or ("4474591") or ("4556404") or ("4655809") or ("4662919") or ("4681612") or ("5019143") or ("5521264") or ("5546764") or ("5561988") or ("5681908") or ("5735936") or ("6244070") or ("6461413") or ("6483000") or ("6837070") or ("7051553") or ("7069744") or ("7073350") or ("7159417") or ("7216507") or ("7674444"))).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/05/25 12:39

S67	29	(US-20100058806-\$ or US-20030131625-\$ or US-20080134717-\$ or US-20040261452-\$ or US-20020166336-\$).did. or (US-6112549-\$ or US-4102659-\$ or US-3793157-\$ or US-3421610-\$ or US-6244070-\$ or US-5685170-\$ or US-5375422-\$ or US-4367121-\$ or US-3926742-\$ or US-7429686-\$ or US-7404891-\$ or US-6116050-\$ or US-5382712-\$ or US-5669238-\$ or US-6116051-\$ or US-5687584-\$ or US-6516631-\$ or US-5890378-\$ or US-4496380-\$ or US-4509967-\$ or US-7377127-\$).did. or (US-2771149-\$ or US-3322650-\$ or US-2227795-\$).did.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/05/25 14:09
S68	19	S67 and (strip or stripping stripped)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/05/25 14:10
S69	2	"6182469".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/05/25 14:11
S70	41	("3212277"   "3212278"   "3407052"   "3413816"   "3707066"   "4142876"   "4185978"   "4410342"   "4430103"   "4457768"). PN. OR ("5669238"). URFN.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/10/11 10:19
S71	1	(10/469456).APP.	USPAT; USOCR	OR	OFF	2011/10/11 10:22

S72	8	("3421984"   "4509967"   "4657571"   "5220797"   "5685170"   "6368385"). PN. OR ("7051553"). URFN.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/10/11 10:22
S73	44	("3592015"   "4171964"   "4251249"   "4278457"   "4318723"   "4350511"   "4371381"   "4596588"   "4617038"   "4680042"   "4687499"   "4690702"   "4692179"   "4698081"   "4851020"   "4885063"   "5152148"   "5275005"   "5421165"   "5566554"   "5588306"   "5600969"). PN. OR ("6116050"). URFN.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/10/11 13:45
S74	82	("20030158458"   "20040079107"   "20050061029"   "20050155381"   "2952984"   "3292380"   "3837172"   "4140504"   "4157904"   "4171964"   "4185978"   "4251249"   "4278457"   "4445916"   "4445917"   "4519824"   "4525185"   "4545795"   "4600421"   "4617039"   "4687499"   "4689063"   "4690702"   "4707170"   "4710214"   "4755200"   "4851020"   "4854955"   "4869740"   "4889545"   "4895584"   "5114451"   "5275005"   "5291736"   "5363655"   "5365740"   "5555748"   "5566554"   "5568737"   "5600969"   "5615561"   "5651269"   "5755114"   "5755115"   "5771712"   "5799507"   "5881569"   "5890378"   "5893274"   "5983664"   "6014869"   "6023942"   "6053007"   "6062041"   "6116050"   "6119479"   "6125653"   "6182469"   "6250105"   "6269655"   "6272882"   "6308531"   "6324867"   "6336344"   "6347532"   "6363744"   "6367286"   "6526777")	US-PGPUB; USPAT; USOCR	OR	OFF	2011/10/11 13:47

		"6604380"   "6742358"   "6907752"   "6941771"   "RE33408").PN. OR ("7210311").URPN.				
S75	4	S74 and (ratio with control)	US-PGPUB; USPAT; USOCR	OR	OFF	2011/10/11 14:01
S76	385	(62/656,657).CCL.S.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/10/11 14:04
S77	31	S76 and (ratio with control)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/10/11 14:04
S78	9	S76 and ("ratio controller")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/10/11 14:05
S79	9	62/657.ccls. and (ratio with controller)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/10/11 14:16
S80	87	{62/618-620 or 62/628 or 62/630 or 62/631 or 62/635 or 62/640 or 62/644 or 62/656 or 62/657).ccls. and @pd >= "20100715"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/10/13 12:56
S81	22	("62"/\$ or "95"/\$ or "96"/ \$ or "202"/\$ or "203"/\$). ccls. and ("ethane rejection mode" or "ethane recovery mode")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/16 10:14
S82	31	("62"/\$ or "95"/\$ or "96"/ \$ or "202"/\$ or "203"/\$). ccls. and ("ethane rejection" and "ethane recovery")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/16 10:14



S83	19	("4171964"   "4185978"   "4278457"   "4851020"   "5291736"   "5335504"   "5555748"   "5566554"   "5615561"   "5771712"   "5799507"   "5953935"   "5960644"   "5992175"   "6109061"   "6112549"   "6182469"   "6425266"). PN, OR ("6823692"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/02/16 13:26
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## EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	0	(absorber and ("vapor feed" or "feed vapor") and ("liquid feed" or "feed liquid") and overhead and ("first and second portion" or ("first portion" and "second portion"))) and separator and ("absorber bottom product" or "absorber bottoms") and reflux and ("ethane reabsorption" or "ethane re-absorption") and stripping and (control \$4) and adjust\$3 and ratio and ethane)	US-PGPUB; USPAT; UPAD	OR	OFF	2012/02/22 16:41
L3	0	(absorber and ("vapor feed" or "feed vapor") and ("liquid feed" or "feed liquid") and overhead and ("first and second portion" or ("first portion" and "second portion"))) and separator and ("absorber bottom product" or "absorber bottoms") and reflux and ("ethane reabsorption" or "ethane re-absorption") and stripping and (control \$4) and adjust\$3 and	US-PGPUB; USPAT; UPAD	OR	OFF	2012/02/22 16:41

(ratio and ethane).clm.

**2/ 22/ 2012 4:42:10 PM**

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